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14th Annual Governors State University Student Research Conference Proceedings

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Proceedings of the 14th Annual GSU Student Research Conference

**Governors State University
University Park, IL 60466**

May 21, 2008

Editor:

**Dr. Shelly Kumar
Division of Science
College of Arts and Sciences**

PARTICIPANTS

Students of Governors State University

College of Arts and Sciences

College of Business and Public Administration

College of Education

College of Health Profession

University College

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Dear Student Researcher:

Welcome to the Annual Governors State University Research Conference. We are proud of the excellence, expertise, and variety of your research presentations. Thank you for sharing your work with the GSU academic community.

A university education goes beyond the mastery of information to the creation of new knowledge. Congratulations to you and to your professors and advisers for participating in the joy of discovery. We are proud to count you as members of the GSU community.

Thank you for participating in this research conference and for what we hope will be a life-long commitment to new ideas.

Sincerely,



**Elaine P. Maimon, Ph.D.
President**

A MESSAGE FROM THE CONFERENCE STEERING COMMITTEE

The steering committee is pleased to announce the 14th Annual GSU Student Research Conference to be held on May 21, 2008. This year we have launched the conference website: www.govst.edu/src. Please visit the website for information about the conference.

For the past thirteen years this conference has become a tradition in excellence, and we are confident that today again we will witness another session of quality presentations by our students. This year we have record number of presentations – sixteen podium presentations and seventeen poster presentations from thirty nine students. The conference will be presented in its original format and with its original objectives:

1. To provide students an opportunity to present their research work before an audience of their peers, and to use the comments they receive to improve presentations made at professional conferences.
2. To provide a forum to highlight research accomplishments at GSU, and honor students presenting their research work.
3. To generate enthusiasm among the student body in general, and encourage them to pursue research and other scholarly activities.
4. To enhance communications in the area of research among the four colleges at GSU. The interactions may also lead to collaborative work among students and faculty of different colleges.
5. To enhance the image of GSU in the area of teaching, as research is considered an integral part of teaching at the university level. In the long run a larger number of students attracted to research would enroll at GSU to pursue higher education.

The committee hopes that you will enjoy the conference, that you share in the excitement of doing research, and that you will look forward to participating in future student and professional conferences.

KEYNOTE SPEAKER BIOGRAPHY

The Student Research Conference Steering Committee is proud to announce that the keynote speaker for the lunch will be:

Dr. Theodore L. Steck, M. D.

Chair, Environmental Studies Program and
Professor, Department of Biochemistry and Molecular Biology
University of Chicago, Chicago, IL

Dr. Theodore L. Steck is the founder and chairperson at the Environmental Studies Program at the University of Chicago. He is also a professor at the Department of Biochemistry and Molecular Biology at the University of Chicago.

Dr. Steck received his Bachelors of Science degree from Lawrence College in Appleton, WI; and his M. D. degree from Harvard Medical School in Boston, MA. He did his clinical internship at the Beth Israel Hospital in Boston, research fellowship in Medicine at the Harvard Medical School, and post-doctoral training at the National Institute of Health prior to joining University of Chicago. He holds an Honorary Doctor of Science degree from Lawrence College.

Dr. Steck's research interests include red blood cell membrane biochemistry, membrane cell biology in *Dictyostelium discoideum*, and cholesterol cell biology. He has over 130 publications, and his research work has been cited more than 18,000 times. He holds a patent on a pharmacologic method of lowering cholesterol production. He has served on the editorial boards of Journal of Supramolecular Structure, Journal of Cell Biology, and Journal of Biological Chemistry. He has served as Board of Directors, Population Connection (Zero Population Growth); Advisory Board, Canadian Institute of Advanced Research, Soft Surfaces and Interfaces Program; Council for Research and Clinical Awards, American Cancer Society; Board of Scientific Counselors, NHLBI at NIH; Member of Advisory Committee on Biochemistry and Chemical Carcinogenesis, American Cancer Society; Surgeon, USPHS at NIH.

Dr. Steck has received several honors and distinctions including Honorary Doctor of Science degree from his alma mater, Lawrence College; Faculty Research Award, American Cancer Society, and Robert A. Welch Foundation Lecturer.

SAVING THE ENVIRONMENT

Theodore L. Steck

Chair, Environmental Studies Program and
Professor, Department of Biochemistry and Molecular Biology
University of Chicago, Chicago, IL

ABSTRACT

The environmental crisis will be the defining issue of the Twenty-First Century. Our human species has evolved the unique capacity to transform rather than accommodate to its environment. Consequently, we have flourished and spread to all habitable parts of the globe. In the process, we have drawn heavily upon and severely impacted the natural world that sustains us: forests, oceans and waterways, the soil, the atmosphere and the climate, the biosphere and many other natural systems. The unintended consequences of this activity have intensified enormously during the 200 years of the Industrial Revolution, such that it seems that we are now outgrowing our planet. Many of our age-old traditional values serve as poor guides for how to prosper in our now-crowded world. Now, our challenge is to learn how to make human activity sustainable--that is, stable if not beneficial over long periods even as we continue to surmount poverty. First, we must come to a deep understanding of our impact on all aspects of our environment. Similarly, we must recognize how our activities undermine our own health, welfare, security and pleasure in life. The ethical dimensions of such activity environmental impact (justice, equity) should also weigh upon us. Given these issues, how should societies now attempting to join the industrial world proceed with their own development and how should the industrial nations relate to their aspirations? How can we improve the social and civil institutions that shape our behavior so that new knowledge and norms can be developed to meet our environmental crisis? These problems are of our making and amenable to our responses if we act decisively. As one example, I shall argue that, although capitalism is decried by many as the nemesis of the environment, good market mechanisms can be a powerful tool in saving the environment.

PROGRAM SUMMARY

Sherman Recital Hall:

Conference Registration & Continental Breakfast

9:00 A.M. – 9:10 A.M.	Welcome and Introduction
9:10 A.M. – 10:30 A.M.	Podium Presentations
10:30 A.M. – 10:50 A.M.	Refreshment Break
10:50 A.M. – 12:10 P.M.	Podium Presentations

Hall of Honors:

12:10 P.M. – 1:00 P.M.	Greetings and Lunch
1:00 P.M. – 1:40 P.M.	Keynote Address

Sherman Recital Hall:

1:40 P.M. – 2:10 P.M.	Poster Presentations
2:10 P.M. – 2:20 P.M.	Certificates Presentation to Student Participants
2:20 P.M. – 3:40 A.M.	Podium Presentations
3:40 P.M. – 4:00 P.M.	Refreshment Break
4:00 P.M. – 5:20 P.M.	Podium Presentations
5:20 P.M. – 5:25 P.M.	Concluding Remarks

CONFERENCE PROGRAM

Conference Registration & Continental Breakfast

8:30 A.M. Sherman Recital Hall

Program Commencement Sherman Recital Hall

9:00 A.M. **Introduction:**
Dr. Shelly Kumar
College of Arts and Sciences

Welcome:
Dr. Jane Hudak, Provost

Podium Presentations Sherman Recital Hall

Session I Moderator:
Dr. Frances Kostarelos
College of Arts and Sciences

9:10 A.M. DETERMINING FILE REPLICATION LEVEL THROUGH
LOCALITY OF FILE REFERENCE, Jonathan S. Hicks and K. C.
Wong*, Computer Science, College of Arts and Sciences, p. 16.

9:30 A.M. FIAT LUX: THE LIGHT AT CHARTRES CATHEDRAL—
THE NORTH ROSE, Silvia Melby and Arthur Bourgeois*, Art History,
College of Arts and Sciences, p. 17.

9:50 A.M. PORTRAIT WITHOUT A FACE, Diane McGarel and Bastien
Desfriches Doria*, Fine Arts, College of Arts and Sciences, p. 18.

10:10 A.M. THE LANGUAGE CONNECTION: IS SYNTACTIC ABILITY
RELATED TO READING COMPREHENSION AND READING
FLUENCY, Norma Doyle, Maribeth Kasik*, and Philip Boudreau*,
Multicategorical Special Education, College of Education, p. 19.

10:30 A.M. *Refreshment Break*

Session II Moderator:

Dr. Akkanad Isaac

College of Business and Public Administration

- 10:50 A.M. THE LATINO IN THE HORSE RACE INDUSTRY, Maria C. Arcay and Carlos Cantu*, Community Counseling, College of Arts and Sciences, p. 20.
- 11:10 A.M. OUTSOURCING AND OFFSHORING, Eva S. Schuth and John Simon*, Business Administration, College of Business and Public Administration, p. 21.
- 11:30 A.M. MICROCLIMATE VARIABILITY IN A PRAIRIE AND AN ADJACENT WOODLAND IN NORTHEAST ILLINOIS, Allison Skorich and Xiaoyong Chen*, Environmental Biology, College of Arts and Sciences, p. 22.
- 11:50 P.M. MOLECULAR MODELING OF SINGLET OXYGEN "ENE" REACTION AND HOCK'S CLEAVAGE, Sumalatha Vaaramachineni and Shailendra Kumar*, Analytical Chemistry, College of Arts and Sciences, p. 23.

Conference Lunch

Hall of Honors

12:10 P.M.

Greetings

Dr. Elaine P. Maimon, President

12:15 P.M.

Lunch

1:00 P.M.

Keynote Speaker

Dr. Theodore L. Steck, M. D.

Chair, Environmental Studies Program and

Professor, Department of Biochemistry and Molecular Biology

University of Chicago, Chicago, IL

Speaking on:

SAVING THE ENVIRONMENT

Poster Presentations

Sherman Recital Hall Lobby

1:40 P.M.

1. HYDROXYLATION OF AROMATIC DERIVATIVES OF PIPERAZINE BY BENZOPHENONE OXIDE, A CHEMICAL MODEL OF CYTOCHROME P-450, Hardik Agrawal and Shailendra Kumar*, Analytical Chemistry, College of Arts and Sciences, p. 34.
2. BEHAVIOR THERAPY MODIFICATION IN A CHILD, Astrid McDermott¹, James R. Coldren^{2*}, Interdisciplinary Studies, ¹University College and ²College of Arts and Sciences, p. 35.
3. WHOSE VOICE? WHOSE CHOICE? AN EXAMINATION OF METHODS USED TO DETERMINE STUDENT PREFERENCES AND INCREASE STUDENT PARTICIPATION AT TRANSITION PLANNING MEETINGS: A QUANTITATIVE DESCRIPTIVE RESEARCH STUDY, Alison L. Mensing and Maribeth Kasik*, Multicategorical Special Education, p. 36.
4. PHYTOCHEMICALS PRESENT IN THE PARSLEY HERB, Maysoon Khalaf and Aheda Saber*, Analytical Chemistry, College of Arts and Sciences, p. 37.
5. TEAMSTER SOLIDARITY AND THE INTERNET: IS THE INTERNET THE TOOL NEEDED TO START A NEW LABOR MOVEMENT?, Dan McMillin and Frances Kostarelos*, Social Science, College of Arts and Sciences, p. 38.
6. SIZE EXCLUSION CHROMATOGRAPHY OF POLY-TRYPTOPHAN, Rusha Savaliya, Jigar Desai, Makoto Imai, and Shailendra Kumar*, Analytical Chemistry, College of Arts and Sciences, p. 39.
7. PORTRAITS OF TIME, Patricia McWilliams and Javier Chavira*, Studio Art, College of Arts and Sciences, p. 40.
8. ABOVE GROUND TREE BIOMASS IN DIFFERENT FOREST COMMUNITIES, IN THORN CREEK, NORTHEASTERN ILLINOIS, Nanda Krishna Ghanta¹ and Xiaoyong Chen^{2*}, ¹Analytical Chemistry and ²Environmental Biology. College of Arts and Sciences, p. 41.

9. AN EXPLORATION OF TEACHERS' PERCEPTIONS ON THEIR TRAINING AND SUPPORT TOWARD THE USE OF FUNCTIONAL BEHAVIOR ASSESSMENTS AND BEHAVIOR INTERVENTION PLANS, Katy Raab, Maribeth Kasik*, and Philip Boudreau*, Multicategorical Special Education, College of Education, p. 42.
10. ECONOMIC AND SOCIAL EFFECTS OF POSTTRAUMATIC STRESS DISORDER AMONG VETERANS OF THE AFGHANISTAN AND IRAQ WARS, Albert Ashley Riley, and Phyllis Johnson*, Business Administration, College of Business and Public Administration, p. 43.
11. PHOTOOXYGENATION OF N-ACETYLTYROSINE ETHYLAMIDE, Ajaykumar Kanyadhara, Vijay Yerramseti, and Shailendra Kumar*, Analytical Chemistry, College of Arts and Sciences, p. 44.
12. SYNTHESIS AND CHARACTERIZATION OF N-ACETYLTRYPTOPHAN ETHYLAMIDE AND N-ACETYLBHISTIDINE ETHYLAMIDE, Dinesh Dobariya, Sandeep Ramoliya, and Shailendra Kumar*, Analytical Chemistry, College of Arts and Sciences, p. 45.
13. THE CASE OF CRETE, ILLINOIS: LAYERS OF IMPRINTS FROM 171 YEARS OF HUMAN ACTIVITY, Marimonica Murray and Frances Kostarelos *, Social Sciences, College of Arts and Sciences, p. 46.
14. AN OVERVIEW OF SUPPLY CHAIN INTELLIGENCE AND ITS APPLICATION IN VARIOUS BUSINESSES, Sandeep Shetty and John Simon*, Management Information Systems, College of Business and Public Administration, p. 47.
15. FOOD-BORNE BACTERIA PRESENCE IN COMPOST USED FOR ORGANIC VEGETABLE PRODUCTION, Todd E. Sippel and Timothy Gsell*, Environmental Biology, College of Arts and Sciences, p. 48.
16. METHOD DEVELOPMENT AND MINIMUM DETECTION LEVEL FOR EFAVIRENZ, Rajnikant Patel and Joseph Addison*, Analytical Chemistry, College of Arts and Sciences, p. 49.
17. PHOTO-DEGRADATION OF TRICLOPYR, Cornelia Forrester Slater and Joseph Addison*, Analytical Chemistry, College of Arts and Science, p. 50.

2:10 P.M. **Certificates Presentation:** Sherman Recital Hall
President Elaine P. Maimon

Session III Moderator:
Professor Cynthia Carr
College of Health Profession

2:20 P.M. A CULTURAL CRUISE DOWN ILLINOIS ROUTE 1, Carol L. Khan¹
and Frances Kostarelos^{2*}, Early Childhood Education, ¹College of
Education and ²College of Arts and Sciences, p. 24.

2:40 P.M. COLIFORM AND E.COLI MONITORING AT AN AGRICULTURAL
COMPOST OPERATION, Matt A. Sandstrom and Timothy Gsell*,
Environmental Biology, College of Arts and Sciences, p. 25.

3:00 P.M. SOUTHLAND HEALTH CAREERS, Stacy Gemmell, Carla Granato,
Kenneth Sutor and Constance Cook*, Business Administration. College
of Business and Public Administration, p. 26.

3:20 P.M. RELATIONSHIP BETWEEN EXPOSURE TO PHONEMIC
AWARENESS AT HOME PRIOR TO ENTERING KINDERGARTEN
AND EARLY LITERACY SUCCESS, Rachel Wietbrock, Maribeth
Kasik*, and Philip Boudreau*, Multicategorical Special Education,
College of Education, p. 27.

3:40 P.M. *Refreshment Break*

Session IV Moderator:
Dr. Maribeth Kasik
College of Education

4:00 P.M. DIGITAL FORENSICS & THE SECURITY OF WINDOWS VISTA:
HOW WILL WINDOWS VISTA AFFECT DIGITAL FORENSICS?,
Latoya Willis and David Green*, Computer Science, ¹College of Arts
and Sciences and ²College of Business and Public Administration, p. 28.

4:20 P.M. DUALISTIC NATURE, Jeremy Spence and Beth Parin*, Art, College of
Arts and Sciences, p. 29.

4:40 P.M. LATINO YOUTH: IDENTITY AND EDUCATION, Fernando Rayas and
Maristela Zell*, Social Work, College of Health Professions, p. 30.

5:00 P.M. WHICH COLLABORATIVE METHOD EDUCATORS PREFER?,
Quintella Bounds, Maribeth Kasik*, and Philip Boudreau*,
Multicategorical Special Education, College of Education, p. 31.

5:20 P.M. *Concluding Remarks*
Dr. Shelly Kumar

ABSTRACTS OF PODIUM PRESENTATIONS

May 21, 2008

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The authors with underlined names are the presenting authors. The authors with asterisks are the faculty sponsors.

Governors State University
University Park, Illinois

DETERMINING FILE REPLICATION LEVEL THROUGH LOCALITY OF FILE REFERENCE

Jonathan S. Hicks and K. C. Wong*

Computer Science
College of Arts and Sciences

ABSTRACT

Producing copies on a printer requires that the printer is currently working. If not and this is the only printer available to the user, he/she has to wait until it is restored. The availability of a printer can definitely be promoted if there are multiple printers working concurrently. Similarly, file availability is greatly enhanced if multiple replicas coexist in a network-based environment. However, current computing systems are not flexible in that they replicate files on a user request basis. In other words, they require system users to determine those files to be replicated and the number of replicas needed in order for file replication to occur.

In this paper, we propose that a system may be capable of determining file replication level for those files that need be replicated based on how they were accessed in the past. In other words, a working set of files may be determined through the locality of file reference made by system users. As a consequence, file replication level can be determined by maintaining a total ordering among those files identified in the locality based on the recency and frequency of their reference.

FIAT LUX: THE LIGHT AT CHARTRES CATHEDRAL— THE NORTH ROSE

Silvia Melby and Arthur Bourgeois*

Art History
College of Arts and Sciences

ABSTRACT

Since the industrial age the world has increasingly become a noisier place. The problems that a noisier world presents have been many. In addition to the common sensorineural impairments associated with higher noise levels, there are the more subtle challenges of noise induced learning impairments. Through a series of articles and journals this research seeks to establish the desired noise levels for optimum learning. While a number of articles have been published on the subject of noise as it relates to the peripheral hearing, the methodology in determining the articles for this particular review concerned the relationship between noise and learning. What is the specific signal to background noise ratio needed in order to facilitate optimum learning? Is this particular ratio the same for all learners? These questions and more will be answered as we explore, Noise - Its Impact On Learning.

PORTRAIT WITHOUT A FACE

Diane McGarel and Bastien Desfriches Doria*

Fine Arts
College of Arts and Sciences

ABSTRACT

My presentation will explore and examine the significance as well as my technique within the art exhibition entitled, "Portrait Without A Face." I begin each one of my pieces by drawing, painting and/or tossing dye onto a canvas. I then scan the painting onto my computer altering the image using two computer programs, Photoshop and/or Jasc PaintShop Pro. My mixed media pieces evolve when I take this digital image and then restructure this image upon the canvas surrounded by acrylic paints, torn and/or ripped paper or canvas, metal and various other items adhered onto the canvas. Each segment of this process should stand alone and have its own identity. I sometimes then re-photograph and/or rescan the mixed media pieces back into the computer and re-create a new digital art piece. This can become an endless circular process of digital, mixed media, digital and then mixed media.

One explanation for me using this technique, as my mode of expression is that I am symbolizing the creation of an endless continuous life cycle: birth, death and rebirth. But I rather take a more post structural view for my creative expression, by asking the viewer/critic to be involved in the interpretation of my art. In my opinion, art and the expression of which is dialogical. It is a multi-faceted conversation that should proceed as a dialogue between the artist and the viewer. A more dialogical approach to this form of communication should be obtained in order to fully appreciate as well as one can the artist intent from multiple levels of expression. As such, I reject the idea that there is one purpose, one meaning and one singular concept that can sum up anything from whether it is a work of what society defines as art to the whole complex structure of what we, as a society call reality.

I prefer to work in the abstract because it gives the viewer/critic more of an opportunity to make an independent interpretation of my artwork. I like expressing my works in the forms of grids depicting the fragmentation of life. As such, I choose to call this series 'Portrait Without A Face' because some of the main concepts depicted within these works are the expression of hidden desires, Carl Jung's theory of our hidden self in relationship to our known self, the emotional state of individuals and society as a whole, and that life constantly re-creates and invents itself. We, as in Baudrillard's theories, create our own reality. Influences for my own artistic self expression include such contemporary artists as Mike and Doug Starn whose torn-up photographs introduced to me the concept of having the viewer feel the photo in a similar fashion as having the viewer feel the paint of a painting

THE LANGUAGE CONNECTION: IS SYNTACTIC ABILITY RELATED TO READING COMPREHENSION AND READING FLUENCY

Norma Doyle, Maribeth Kasik*, and Philip Boudreau*

Multicategorical Special Education
College of Education

ABSTRACT

The relationships between syntactic ability and reading fluency and reading comprehension were examined in this study of 121 fourth and fifth graders. Syntactic ability correlated significantly with reading fluency, $r(115) = .71, p < .001$ and reading comprehension, $r(115) = .64, p < .001$; lower syntactic scores related to lower reading scores. The syntactic ability of students in regular and special education were compared, finding special education scoring significantly lower. Discrete correlational analysis of each group found the special education sample to have higher correlations ($r^2 = .50$) between reading fluency and syntactic skills than the regular education sample ($r^2 = .25$). Findings imply a need for a better understanding of the connection between language skills and reading achievement.

THE LATINO IN THE HORSE RACE INDUSTRY

Maria C. Arcay and Carlos Cantu*

Community Counseling
College of Arts and Sciences

ABSTRACT

This presentation provides a snapshot to the lifestyle of the Latino in the horse race industry in Illinois. The study aims at exploring the characteristics of the environment, lifestyle and the social supports available to this population. It highlights the seasonal migrations particular to the industry and its impact on the population. The significance of the study is to bring to light the socio-economic characteristics of the Latino immigrant population in the horse racing industry for a better understanding of their contribution and or trade off to the horse racing industry.

OUTSOURCING AND OFFSHORING

Eva S. Schuth and John Simon*

Business Administration
College of Business and Public Administration

ABSTRACT

Will offshoring (outsourcing to foreign companies) inevitably lead to a catastrophe for workers in developed countries, especially the United States? Are the cost savings that companies are reaping due to the increased productivity or rather due to the reduced labor cost in the third world countries? Does the increased cost of unemployment and re-training negate the benefits gained?

While there are winners and losers from outsourcing, proponents argue that outsourcing increases productivity, thereby improving a sector's or country's competitiveness. Additionally it reduces the overall price of products, generating benefits for the entire consuming population.

This research examines the linkages between outsourcing, offshoring and productivity, as well as the risks and benefits of outsourcing. Even though there seems to be a correlation between outsourcing and productivity, it may not mean causation. Furthermore it is not clear what the productivity measures truly represent. And at the level of a firm, the risk due to reduced control, and the risk of loss of intellectual property are quite high.

MICROCLIMATE VARIABILITY IN A PRAIRIE AND AN ADJACENT WOODLAND IN NORTHEAST ILLINOIS

Allison Skorich and Xiaoyong Chen*

Environmental Biology
College of Arts and Sciences

ABSTRACT

Microclimate is a suite of environmental variables in small and specific areas near the earth's surface. These environmental variables determine local ecological patterns in both plant and animal communities. They affect biological and ecological processes such as plant generation and growth, nutrient elements cycle, microbial activity, and wildlife habitat selection. Little is known, however, about any differences between microclimate variables in different plant communities in northeast Illinois during wintertime. This study was intended to examine the variation of several environmental parameters (light intensity, air and soil temperature, and wind-speed) in a prairie and a deciduous woodland stand in winter season. The objectives of the research were to (1) quantify spatial variability of light intensity, temperature and wind speed in a prairie community, and (2) compare the differences of these environmental between a prairie and an adjacent deciduous woodland.

Our results showed that average light intensity was 125.8 and 216.2 $\mu\text{mol m}^{-2}\text{s}^{-1}$ at floor and 100 cm above the floor, respectively, in prairie during the study period, which are significantly higher than those in the woodland stand (44.1 and 76.2 $\mu\text{mol m}^{-2}\text{s}^{-1}$, respectively). Mean temperature at 30 cm below the floor was also found to be statistically higher in prairie than in woodland. But the differences of temperatures at both surface and 30 cm above the surface between the prairie and woodland were not significant statistically. The wind speed ranged from 0 to 4 m/sec. during the study period, and no significant differences were found in terms of wind speed between the two plant communities. Our study indicated that most differences of the microclimate parameters in these two community types are attributed to the differences of structural characteristics of the grassland and forest, which result in the different patterns of energy flow in the two plant communities.

MOLECULAR MODELING OF SINGLET OXYGEN “ENE” REACTION AND HOCK’S CLEAVAGE

Sumalatha Vaaramachineni and Shailendra Kumar*

Analytical Chemistry
College of Arts and Sciences

ABSTRACT

Singlet oxygen “ene” reaction of alkenes generate allylic hydroperoxide, which have been shown to undergo the cleavage of the alkene double bond under acidic conditions to produce two compounds, each having one carbonyl group by a reaction called Hock’s cleavage. We have used these reactions in combination with the intramolecular aldol reaction to synthesize novel azulene derivatives (fused 7 and 5 membered rings) from ordinary two fused six-membered rings.

In this project we are studying the mechanisms of the singlet oxygen “ene” reaction of tetramethylethylene (TME), and the Hock’s cleavage of the resulting allylic hydroperoxide by molecular modeling with the help of Spartan software. The mechanism of the “ene” reaction is proposed to be a concerted reaction. We have calculated the activation energy of this reaction, and we have mapped the reaction energy diagram by molecular modeling. These results confirm the concerted reaction mechanism. The Hock’s cleavage reaction has six steps. We are studying the mechanisms of these steps by molecular modeling. Each step is studied by determining its transition state, surface diagram, changes in bond densities, and changes in the charge distribution in the electrostatic potential maps. The preliminary results show that the mechanisms follow the traditionally established six-step mechanism. The future work will include establishing the mechanisms of the azulene derivative.

A CULTURAL CRUISE DOWN ILLINOIS ROUTE 1

Carol L. Khan¹ and Frances Kostarelos^{2*}

Early Childhood Education

¹College of Education and ²College of Arts and Sciences

ABSTRACT

The subject of this project was a three-mile stretch of Illinois Route 1 starting north from the intersection of Illinois Route 30 and ending at the Cook/Will County line. The historic and cultural significance of the names of various places and roads is documented to show how history and culture are key elements people use to remember people, places and history important to them. Photos document the push and pull movement of people in and out of the area due to economic concerns. This fusion of old history and new cultures, out-movement and immigration combine to create a unique sense of place to a small stretch of Illinois highway. The photographs of the project document the buildings, businesses, signs and other man-made structures that define the tastes, values, aspirations and fears of the people and combine to create the unique cultural landscape that the local people call home.

COLIFORM AND E.COLI MONITORING AT AN AGRICULTURAL COMPOST OPERATION

Matt A. Sandstrom and Timothy Gsell*

Environmental Biology
College of Arts and Sciences

ABSTRACT

Composting is an important tool for recycling organic waste materials into usable humus for crop fertilization and soil building. Compost operations utilize various feedstock sources such as municipal yard clippings and lawn waste, food plant waste, sewage sludge, animal manure, and other various sources. Despite the variety of sources of raw material for composting, it has been shown that the process is effective at producing safe, hygienic humic material for food crop utilization. However, for food manufacturers utilizing crops treated with compost, it is critical that valid food safety steps are implemented and monitored to verify effectiveness. Hazard Analysis and Critical Control Points (HACCP) is a food safety system that can help food processors ensure food safety and regulatory compliance. In this research, an agricultural composting facility that supplies compost to an organic herb farm was analyzed for effectiveness in reducing coliforms and other indicator organisms during the compost process.

SOUTHLAND HEALTH CAREERS

Stacy Gemmell, Carla Granato, Kenneth Sutor and Constance Cook*

Business Administration
College of Business and Public Administration

ABSTRACT

Southland Health Careers is a not-for-profit organization geared toward the economically disadvantaged to prepare them for careers in the health care field. Southland is an occupational career training and certification program. These programs include: Certified Nursing Assistant, Phlebotomy Technician Training and Certification, Dialysis Technician and Health Unit Coordinator. Information was provided to the MGMT 444 Service Operations class about length of classes, enrollment, and statistics on graduating classes.

The original request was for graphics materials such as brochures, letterheads, business cards and Web site development. It was determined that the organization lacked adequate mission statements, business plans, SWOT analyses for the various areas, as well as an organized financial program.

The mission statement developed follows: *"To enrich the health care system by providing education, training, and enhancement opportunities for the economically disadvantaged and diverse members of our community."*

A SWOT analysis and business plan was developed. These analyses provided the organization with its strengths, weaknesses, opportunities, and threats. We also provided Southland with different potential strategies to assist them to implement their future plans.

Logos, letterheads, business cards, and fact sheets were created for this project with several options for the advertising portion. These were produced to help Southland generate a more creative and coherent appearance for prospective future students.

In aiding Southland Health Careers, we were given insight into what it takes to run a not-for-profit organization. We learned how to create a business plan and implement goals. We also learned the difficult task of budgeting a not-for-profit organization that relies on grants and gift funding. It was also a good community service outreach for Governors State University.

RELATIONSHIP BETWEEN EXPOSURE TO PHONEMIC AWARENESS AT HOME PRIOR TO ENTERING KINDERGARTEN AND EARLY LITERACY SUCCESS

Rachel Wietbrock, Maribeth Kasik*, and Philip Boudreau*

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ABSTRACT

Phonemic awareness and parental involvement are two key factors in determining a child's academic success. Children who are successful in mastering phonemic awareness skills prior to the end of third grade will be more successful readers than those children that don't. Parents who remain involved in their children's education will have children that exhibit more academic success than those children whose parents aren't as involved. When parents work with their children on phonemic awareness skills before they enter kindergarten, do the children become better readers? Using first through third graders and their parents, this study was conducted to answer a series of questions regarding parental involvement in developing phonemic awareness skills in their children prior to entering kindergarten.

DIGITAL FORENSICS & THE SECURITY OF WINDOWS VISTA: HOW WILL WINDOWS VISTA AFFECT DIGITAL FORENSICS?

Latoya Willis and David Green*

Computer Science

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ABSTRACT

Some features of the new Microsoft Windows Vista are already creating challenges for digital forensic investigators. However, Microsoft's new Operating System also provides opportunities and creates interesting new evidence which can be recovered and analyzed. This paper will explore several of Vista's new features such as; identifying BitLocker on a system, the importance of recovering keys in dealing with BitLocker encryption, and the problems that could arise with the use of User Account Control during live investigations.

DUALISTIC NATURE

Jeremy Spence and Beth Parin*

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ABSTRACT

I will present the idea of duality that exists within human nature. The idea that there are always two sides to the same coin is fascinating. My ideas for this idea come from different aspects, such as philosophical and religious backgrounds. I would explain briefly the concept of duality from where it came from to where it is today.

The work being presented is all digital. It is in Photoshop format, and it starts from my first works up to my present works. My first works involve the manipulation and combination of photographs together to create a new image. The more recent works involve digital paintings used with the brushes provided within Photoshop. I will select the most successful works from each series I have done and present them.

I feel each work is significant because I try to represent some form of duality in each work. No matter the significance is either large or small, the idea that two ideas exist at the same time.

LATINO YOUTH: IDENTITY AND EDUCATION

Fernando Rayas and Maristela Zell*

Social Work
College of Health Professions

ABSTRACT

Latinos are the fastest-growing population in the United States. Latinos made up seventeen percent of the total youth population in 2005, youth among ages sixteen to twenty-four accounted for forty-one percent of all high school drop-outs in the U.S. Despite their demographic significance, Latinos are the most uneducated ethnic group in the United States. Analyzing the movie Walkout, it is quite evident that cultural identity plays a very significant role in the process of social empowerment among Mexican-American youth in the late 1960s. This paper describes the impact that the U.S. educational system and media have on the identity of Latino youth. It also explains how cultural identity among Latino students affects their academic and social success in this country.

WHICH COLLABORATIVE METHOD EDUCATORS PREFER?

Quintella Bounds, Maribeth Kasik*, and Philip Boudreau*

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ABSTRACT

The purpose of this study was to examine the preferential collaborative teaching method general and special needs educators prefer. This paper takes a close look at the topics of special education landmark cases, legislation, educator-related variables that influence the educators' attitudes toward the inclusive classroom, and the different methods of collaborative teaching. Participates in this study were selected from the population of primary and intermediate educators (kindergarten – 6th grade). The participants included in this study were nineteen respondents from the same school district. The research design for this study was quantitative-descriptive self-developed Likert scale survey. The questions of the survey were used to correlate a relationship with the educators' answers to establish whether there was a statistical significance. The results of the study revealed the educators preferred the team teaching collaborative method.

ABSTRACTS OF POSTER PRESENTATIONS

May 21, 2008

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Governors State University
University Park, Illinois

HYDROXYLATION OF AROMATIC DERIVATIVES OF PIPERAZINE BY BENZOPHENONE OXIDE, A CHEMICAL MODEL OF CYTOCHROME P-450

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College of Arts and Sciences

ABSTRACT

A few aromatic piperazine derivatives have been reported to be metabolized by cytochrome P-450, the monooxygenase enzymes found in the liver and other tissues, to the oxidized products in which piperazine ring has been hydroxylated with no hydroxylation occurring at the aromatic ring. However, an aromatic hydroxylation is a common reaction catalyzed by cytochrome P-450 enzymes. We report hydroxylation of 1-benzylpiperazine by benzophenone oxide, a carbonyl oxide which has been shown to be a chemical model of monooxygenase enzymes in our laboratory. Benzophenone oxide, produced by a reaction between diphenyldiazomethane and singlet oxygen, oxidized 1-benzylpiperazine to phenolic products. The differing results suggest that the aromatic ring may not be available sterically for hydroxylation or it may be deactivated by a substituent for an electrophilic attack in the enzymatic oxidations.

BEHAVIOR THERAPY MODIFICATION IN A CHILD

Astrid McDermott¹, James R. Coldren^{2*}

Interdisciplinary Studies

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ABSTRACT

Behavior Modification applied to 5-year-old girl who shows signs of anxiety and attachment towards her mother. The child does not show any signs of distress while at school, daycare or extra-curricular activities. Child's behavior is only displayed toward the mother while at home. Child shows distress when mother leaves the house to run errands or leaves the room. Child does not show this behavior pattern toward any other family member in the household. Mother will use different techniques presented to her and implement during the third and fourth week of treatment. Mother is to log child's normal behavior for a period of two weeks in order to create a baseline. During the third and fourth week, mother will implement techniques and keep logging information. The goal of the treatment is to eliminate the child's behavior when mother leaves her side and to alleviate child's stress by giving her the necessary tools to achieve it.

**WHOSE VOICE? WHOSE CHOICE? AN EXAMINATION OF METHODS USED
TO DETERMINE STUDENT PREFERENCES AND INCREASE STUDENT
PARTICIPATION AT TRANSITION PLANNING MEETINGS:
A QUANTITATIVE DESCRIPTIVE RESEARCH STUDY**

Alison L. Mensing and Maribeth Kasik*

Multicategorical Special Education
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ABSTRACT

Even though transition plans are based on students' needs and guided by their post-school visions, many students feel uninvolved in developing their transition plans. This quantitative descriptive research study examines the methods used to determine student strengths, preferences and interests in transition planning. The participants of this study were teachers of a large special education cooperative located in the southern suburbs of Chicago. Data for this study was derived from a questionnaire which asked teachers to indicate which assessment instruments they use to evaluate their students and which self-determination curricula they use to teach self-advocacy skills. Results indicated a broad variety of formal and informal methods were used. Over 80% of the respondents used a self-determination curriculum with their students.

PHYTOCHEMICALS PRESENT IN THE PARSLEY HERB

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ABSTRACT

Parsley (*petroselinum crispum*) is one of the most popular green herbs around the world. It can be grown in most climates, and it is available throughout the year. It has found that eating parsley gives many health benefits. Parsley has been used in medicine that treats a variety of illness.

In this project various phytochemicals were extracted from parsley. Parsley was extracted with several solvents. The first solvent used for the extraction was ethanol; dried powdered parsley was placed in a vial, and then ethanol solvent was added for the extraction solvent. The laboratory shaker is utilized in the extraction method, and approximately three hours be allowed for the extraction time so the components of parsley would be extracted into the ethanol. After three hours extraction time, the liquid layer was separated from the solid layer by transferring the liquid part utilizing a disposable pipette. The liquid was then analyzed by GC, and GC/MS. The second solvent was hexane; the same extraction method was used.

TLC plates were used to separate the compounds. A small amount of sample spotted on the bottom of the TLC plate, placed in the glass TLC chamber which contains a small amount of the solvent ((180% hexane, 20% diethyl ether, and 2% acetic acid.), (70% petroleum ether, 30% ethyl ether, and 30% glacial acetic acid)). UV light was used to see the bands formed, and Rf values were calculated. Some of the TLC plates were scraped; each color was put in different vial, dissolved with methanol, and then used in GC, GC/MS, and LC/MS.

Parsley components were separated by column chromatography technique. The liquid sample poured gently to the column; three kinds of solvents were used here, the first solvent was 70% petroleum ether, 70% ethyl ether, and 1% glacial acidic acid, the second solvent was 90% petroleum ether, and 10% acetone, and the last solvent was 92% acetone with 8% petroleum ether. The pure samples collected were analyzed using GC, and GC/MS.

Several phytochemical components were recognized in parsley (Ascorbic acid (vitamin C), Diosgenin, Folic acid, chlorophyll, Xanthophylls (lutein), Diosmin, Vitamin K, Apigenin, Apiol, Apiin, luteolin, Rosmarinic acid, β -carotene, Vitamin A (retinol), isorhamnetin-glucoside, and α -Alpha-lenolenic acid).

TEAMSTER SOLIDARITY AND THE INTERNET: IS THE INTERNET THE TOOL NEEDED TO START A NEW LABOR MOVEMENT?

Dan McMillin and Frances Kostarelos*

Social Science
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ABSTRACT

This presentation will give an overview of research I have conducted on the Internet and how it is being embraced by the International Brotherhood of Teamsters (IBT). The information for this project came from pre-existing scholarly literature and first hand interviews. I am a member of IBT local 179 which allowed me to interview some of the membership and one of the local officials. My interviews were short and simple, basically asking whether the interviewees used the Internet as a resource for union information. Though my research was limited by time, I did get some information on whether the membership uses the Internet as a resource for union information. My general findings indicate that most of the membership of this one local does not use the Internet for this type of information. So my presentation would primarily consist of a discussion of these findings with some commentary on why I think the results occurred the way they did. In the end, my study raised more questions than answers, but I feel it is still significant because it addresses the weakening state of unions in this country, and whether the Internet can help function as a device to strengthen solidarity.

SIZE EXCLUSION CHROMATOGRAPHY OF POLYTRYPTOPHAN

Rusha Savaliya, Jigar Desai, Makoto Imai, and Shailendra Kumar*

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College of Arts and Sciences

ABSTRACT

Photooxidation of proteins causes dimerization, trimerization, etc. In the literature, these aggregation are mainly attributed to covalent disulfide bonds by the combination of two cysteine moieties. However, other amino acids, particularly, methionine, tryptophan, histidine, tyrosine, and phenylalanine are also susceptible toward photooxidation, and are oxidized to a large number of photooxidation products. Our overall goal is to study crosslinks formed by amino acids other than cysteine. In one of the approaches, we are studying photooxidation of polyamino acids, in which only one amino acid is present. This approach simplifies the complexities involved with the proteins having twenty amino acids. In this study we are focusing on polytryptophan.

Our design of the experiment is to photooxidize polytryptophan, and to analyze for the presence of dimers, trimers, etc by molecular weight determination of the photooxidized products. However, the traditional methods of molecular weight determination (viscosity, light scattering methods, etc) require large samples. In the first part of the study, we are establishing a method to determine molecular weights of polytryptophan by size exclusion chromatography, which requires micro samples for analysis. The traditional solvents used in chromatography – water, methanol, acetonitrile, etc., are not suitable, as polytryptophan is insoluble in these solvents. We are using mixtures of methanol and DMF as mobile phase for size exclusion chromatography for separation of polytryptophan. The photooxidation studies will be conducted after establishing method for determination of molecular weights of polytryptophan.

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PORTRAITS OF TIME

Patricia McWilliams and Javier Chavira*

Studio Art
College of Arts and Sciences

ABSTRACT

This body of work currently in progress will at its conclusion include 16 to 18 portrait paintings, focusing on the aging population in America. From the “greatest generation” to the most recent retirees of “baby boomers”, I portray the individual character, strength, and beauty of each of these maturing spirits.

By first photographing these distinct people in postures most natural to them, and also interviewing each, I am able to experience their true essence both physically and psychologically, prior to the rendering. I choose expressions, which best commune with the quintessential uniqueness of each. Then portraying the composition in vibrant saturations of color, brushstrokes, and artist marks. I offer the viewer a closer look into the windows of these extraordinary souls in aging bodies. I appreciate both the splendor of the visual artistic expression, and the majesty of the human experience. In this short introduction to the series, I aspire to capture and communicate both. Aiming to inspire spectators to spend time looking at and recognize the beauty of the natural changes in physical appearance. Then moving the viewer emotionally by communicating the dignity, strength and vitality, ever present in this third and fourth quarter generation.

ABOVE GROUND TREE BIOMASS IN DIFFERENT FOREST COMMUNITIES IN THORN CREEK, NORTHEASTERN ILLINOIS

Nanda Krishna Ghanta¹ and Xiaoyong Chen^{2*}

¹Analytical Chemistry and ²Environmental Biology
College of Arts and Sciences

ABSTRACT

Biomass is an important index in forest ecosystems to present an indication of rate of atmospheric carbon sequestration. In addition, biomass, expressed as the dry weight of all organic matter in a given ecosystem, is widely recognized as a parameter for energy utilization, especially bio-fuels estimation. Therefore, measurements of forest biomass (such as tree growth) give us basic and necessary data and information to manage a healthy environment and to plan sustainable forest ecosystem management.

Aboveground tree biomass at different forest communities in Thorn creek watershed in northeastern Illinois was estimated. The forest community in the watershed was divided into two major categories as upland forest and floodplain forest. A total of 40 plots (each with area of 0.04 ha) was set up in the watershed (20 plots for each upland and floodplain forest types). Above ground tree biomass of each tree species, including leaf, branch, and stem was estimated using the equation $B = a.Db$, published in peer-reviewed journals for corresponding same tree species. Our results showed that above ground tree biomass ranged from 1.25 to 63.2 t/ha in upland forest, and 1.4 to 9.7 t/ha in floodplain forest. Our results highlight that the different forest types have different biomass accumulation in Northeastern Illinois, which should be considered when we make forest management plan in different forest types.

AN EXPLORATION OF TEACHERS' PERCEPTIONS ON THEIR TRAINING AND SUPPORT TOWARD THE USE OF FUNCTIONAL BEHAVIOR ASSESSMENTS AND BEHAVIOR INTERVENTION PLANS

Katy Raab, Maribeth Kasik*, and Philip Boudreau*

Multicategorical Special Education
College of Education

ABSTRACT

This study explores teachers' perceptions on their training and support toward the use of functional behavior assessments (FBA) and behavior intervention plans (BIP). An overview of special education law is included, emphasizing the mandates of functional behavior assessments and behavior intervention plans. This study also addresses the connections among functional behavior assessments, behavior intervention plans, positive behavior interventions, and Response to Intervention. Special education teachers from the northern region of Illinois participated in this study. Data derived from an online survey, indicated that special education teachers were using FBAs-BIPs, but felt they did not have adequate training and support in this area. The data results were presented through a qualitative narrative review and quantitative tabular representation.

ECONOMIC AND SOCIAL EFFECTS OF POSTTRAUMATIC STRESS DISORDER AMONG VETERANS OF THE AFGHANISTAN AND IRAQ WARS

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Business Administration
College of Business and Public Administration

ABSTRACT

The purpose of the research presentation is to examine the economic and social effects of posttraumatic stress disorder in veterans of the Iraq and Afghanistan wars. The war on terror is a response to global terrorism. The Afghanistan campaign began on October 7, 2001 and the Iraq campaign began on March 20, 2003. As soldiers return from active duty and reintegrate into civilian life psychological and personal struggles manifest. Media suggests the suicides among veterans may exceed the deaths from combat. This and the problems associated with returning to life before active combat role provides the basis of examination for the research. The difficulties of returning to civilian life take a toll on the socio-economic health of the veteran. Support groups for veterans of foreign wars are geared towards an older veteran; to properly treat the mental ailments of returning soldiers, the existing services must be reviewed and updated or expanded. The work to be presented for the conference will define and highlight PTSD and examine the rate of suicide among veterans. An attempt to quantify the economic effects updating the current support system for veterans and calculate the negative effects on the workforce due to PTSD. The significance of the research is to examine how this vulnerable population is not receiving the services they deserve after serving our country. Although the war may be unpopular, the soldiers fighting are following orders and as a result deserve to be supported and treated with care and respect upon their return home.

PHOTOOOXYGENATION OF N-ACETYLTYROSINE ETHYLAMIDE

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ABSTRACT

Oxidation of eye lens protein in the presence of light causes crosslinking and aggregation of protein, which, in turn, are responsible for most type of cataracts. In the literature, crosslinking in proteins is mainly attributed to covalent disulfide bonds formed by the combination of two cysteine moieties. However, other amino acids, particularly, methionine, tryptophan, histidine, tyrosine, and phenylalanine are also susceptible toward photooxidation, and are oxidized to a large number of photooxidation products. The products of these "active" amino acids contain far more organic functionalities than their precursors. It is likely that several types of non-disulfide covalent bonds may form during protein crosslinking by further reactions of photooxidation products/intermediates of these amino acids. However, the identification of non-disulfide cross-links formed in protein is very tedious. We are, therefore, investigating non-disulfide covalent linkages by simple model compounds, which do not have complexities of proteins. One of the approaches is to study photooxidation of peptide resembling derivatives of these "active" amino acids.

This study focuses on Photooxygenation N-acetyltyrosine ethylamide (NATyrEA), a compound with two amide bonds. NATyrEA was synthesized by reaction of ethyl amine with N-acetyltyrosine ethyl ester, and it was characterized by its melting point, IR spectroscopy, and proton-NMR spectroscopy. Photooxygeantion of NATyrEA was carried out by visible light in the presence of oxygen and rose-bengal as sensitizer. The reaction mixture was analyzed by LC-MS to seek the dimer of NATyrEA. The results of photooxygenation will be shown in this presentation.

SYNTHESIS AND CHARACTERIZATION OF N-ACETYLTRYPTOPHAN ETHYLAMIDE AND N-ACETHISTIDINE ETHYLAMIDE.

Dinesh Dobariya, Sandeep Ramoliya, and Shailendra Kumar*

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ABSTRACT

N-acetyl ethylamide derivatives of amino acids have two amide groups – on both the amine side and the carboxylic acid side of amino acids. These amino acids derivatives, thus, resemble peptides, as all the essential chemical bonds of peptides are present in these derivatives. We are using these derivatives as model compounds to study crosslinking in proteins.

In this study, we have synthesized two derivatives. The first derivative, N-acetylhistidine (NAHisEA), is synthesized by esterification of N-Acetylhistidine with methanol in the presence of sulfuric acid to yield N-acetylhistidine methyl ester, which then is reacted with ethyl amine to yield NAHisEA. The second derivative, N-acetyltryptophan ethylamide (NATrpEA) is directly synthesized by the reaction of N-acetyltryptophan ethyl ester with ethylamine. Both the derivatives are characterized by their melting points, IR spectroscopy, and proton-NMR spectroscopy. The results of the synthesis and characterization will be shown.

THE CASE OF CRETE, ILLINOIS: LAYERS OF IMPRINTS FROM 171 YEARS OF HUMAN ACTIVITY

Marimonica Murray and Frances Kostarelos *

Social Sciences
College of Arts and Sciences

ABSTRACT

This research revolves around migration or the movement of people, goods, and services and the visible imprint of human activity in the location of a settlement called Crete, Illinois (in Will county) as described in terms of Latitude: 41.46 N, Longitude: 87.62 W. The material character of Crete has managed to retain some of its original features while still continuing to evolve into a post modern town. Even though the economic development of the town has been deliberately and historically slow for a majority of its past 171 years, Crete can no longer ignore outside pressures from Chicago's urban sprawl. One major question is whether Crete will be able to retain its small town historic, farm-like, and German styled charm as it experiences the development of more and more sub-divisions of homes, retail and industrial businesses, and address transportation (or other) issues that may happen as a result of these modern developments.

To understand Crete today is to appreciate historical events of yesteryear. Some questions that come to mind are how did Crete become settled in its earliest days? Who were the first non-native residents to migrate to the area? Why did they come? These questions are relevant since history is an important aspect for Crete citizens. They construct their identity and place in the context of contemporary times by being mindful of the past. They are a living history where their connection to the past guides them towards who they are today—and what they will be tomorrow.

AN OVERVIEW OF SUPPLY CHAIN INTELLIGENCE AND ITS APPLICATION IN VARIOUS BUSINESSES

Sandeep Shetty and John Simon*

Management Information Systems
College of Business and Public Administration

ABSTRACT

Introduction:

Business Intelligence: It refers to technologies, applications and practices for the collection integration, analysis, and presentation of business information and also sometimes to the information itself.

Supply Chain Management: It is the process of planning, implementing and controlling the operations of the supply chain as efficiently as possible.

Supply Chain Intelligence = Business Intelligence + Supply Chain Management

Supply Chain Intelligence: Supply chain intelligence (SCI) is a discipline that leverages both internal and external enterprise resource planning (ERP) and Supply chain management.

Thesis:

Supply Chain Intelligence is the new manufacturing paradigm (after supply chain management). Operations Management made internal operations efficient; Supply Chain Management made supply chain operations efficient. Supply Chain Intelligence offers to understand supply chain operations to yield higher profits.

Supply chain intelligence is the way to address numerous supply chain challenges that persist in most enterprises today. It is fundamentally a predictive discipline that helps planners foresee events and anticipate trends. Predictive and analytical modeling techniques, along with optimization, are at the core of supply chain intelligence.

Conclusion:

This is the wave of the future and helps in better management of the Supply chain. Many ERP firms are buying up BI firms and the number is expected to rise.

FOOD-BORNE BACTERIA PRESENCE IN COMPOST USED FOR ORGANIC VEGETABLE PRODUCTION

Todd E. Sippel and Timothy Gsell*

Environmental Biology
College of Arts and Sciences

ABSTRACT

Compost from an industrial vegetable operation in northeastern Illinois was sampled weekly over 3 months. Since restaurant waste was included in the compost, the presence for *Listeria*, *Shigella*, and *Salmonella* were investigated. The 13 samples were diluted with purified water, and tested for bacteria, using different types of agar. Levine's Eosin Methylene-blue agar, *Salmonella Shigella* agar, and McBride *Listeria* agar were used for growth media. No growth was visible on the *Salmonella Shigella* agar, but growth was apparent on the Levine's Eosin Methylene-blue agar, and the McBride *Listeria* agar.

Bacterial colonies from the Levine's Eosin Methylene-blue agar were identified using Enterotubes. *Enterobacter* and *Acinetobacter* species were found, but no *Salmonella* or *Shigella*. Colonies from the McBride *Listeria* agar were identified using BIOLOG with the following bacteria repeatedly appearing: *Bacillus cereus*, *Bacillus mycoides*, and *Rhodococcus rhodochrous*. The tests failed to show the presence of the pathogens *Listeria*, *Shigella*, or *Salmonella*.

A bacterial community study was performed using BIOLOG Ecoplate techniques. The plates were read daily for 1 week, showing an increase in bacterial activity over time for all samples.

Monitoring the bacterial identification is a practice that should be implemented in the composting process when this compost is being utilized for organic vegetable production. Sources of compost and bacterial levels over the duration of this process should also be investigated.

METHOD DEVELOPMENT AND MINIMUM DETECTION LEVEL FOR EFAVIRENZ

Rajnikant Patel and Joseph Addison*

Analytical Chemistry
College of Arts and Sciences

ABSTRACT

Efavirenz is a non-nucleoside reverse transcriptase inhibitor and is used as a part of highly active antiretroviral therapy for the treatment of human immunodeficiency virus (HIV-1). The main objectives of this research project were to establish a validation method and the minimum detection limit for the analysis of efavirenz by Gas chromatograph/Mass spectrometer (GC/MS) and Liquid Chromatograph/Mass spectrometer (LC/MS).

LC/MS validation method indicated a superior limit of detection for efavirenz compared with GC/MS validation method. The minimum detection limit (MDL) established by LC/MS was ~ 1PPM, While scanning negative ions in selected ion monitoring (SIM) mode.

This LC/MS negative ion SIM mode method, demonstrated for the first time, a validation method for efavirenz, that has the potential of being far more sensitive than validation methods based on Gas Chromatography/Mass spectrometry (GC/MS) or LC/MS positive ion SIM mode.

PHOTO-DEGRADATION OF TRICLOPYR

Cornelia Forrester Slater and Joseph Addison *

Analytical Chemistry
College of Arts and Science

ABSTRACT

Triclopyr, is a pyridine-based herbicide present in two formulations, the triclopyr ethylamine (TEA) (marketed in Garlon 3A) and triclopyr butoxyethyl ester (TBEE) (in Garlon 4). Triclopyr is a selective, systemic herbicide and there are concerns of dioxin impurities occurring both in its manufacture and environmental degradation. This study extends previous research to investigate the photo-degradation of triclopyr (3, 5, 6 trichloro-2-pyridineoxyacetic acid). The bond orders will be calculated for the ground state molecular configuration of triclopyr and the resulting values will be used to predict the photo-degradation products observed. Product verification from the photo-degradation scheme will be done by using chromatography and spectroscopic methods.

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